EA-NGWCLC BOX 6

Canolfan Genedlaethol Dŵr Daear a Thir wedi'i Lygru

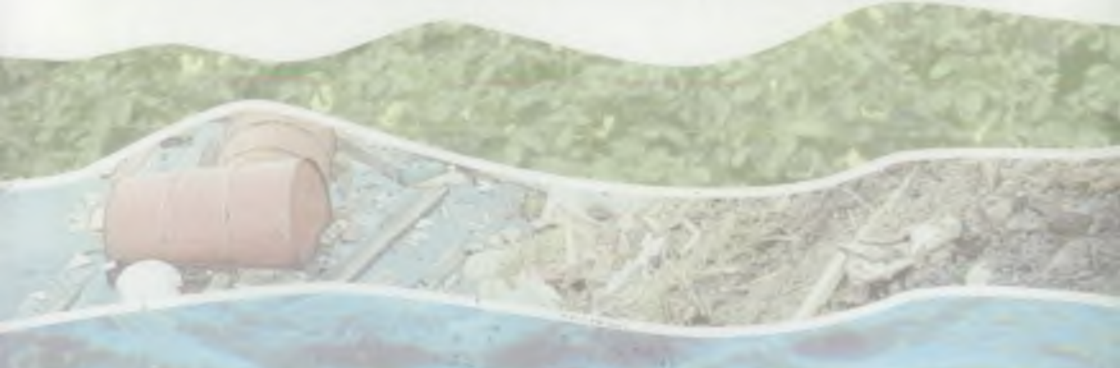
PARTHAU GWARCHOD DŴR DAEAR

Methodoleg a diffiniad o'r parthau gwarchod

The National Groundwater and Contaminated Land Centre

GROUNDWATER PROTECTION ZONES

Methodology and definition of protection zones



ASIANTAETH YR AMGYLCHEDD CYMRU
ENVIRONMENT AGENCY WALES

PARTHAU GWARCHOD DŴR DAEAR

Methodoleg a diffiniad o'r parthau gwarchod

Mae Polisi ac Arfer Asiantaeth yr Amgylchedd ar gyfer Gwarchod Dŵr Daear yn darparu fframwaith ar sail perygl er mwyn gwerthuso cynigion ar gyfer datblygiadau tir a allai gael effaith ar y dŵr daear sydd dan yr wyneb. Mae hyn yn cael ei atgyfnerthu gan nifer o arfau technegol sy'n caniatáu asesiad manylach o'r peryglon i ddŵr daear. Un o'r arfau hyn yw dynodi parthau gwarchod tarddleoedd o amgylch safleoedd tynnu dŵr ar gyfer y cyflenwad cyhoeddus a thargedau sensitif eraill.

Mae Canolfan Genedlaethol Dŵr Daear a Thir wedi'i Lygru wedi hwyluso diffinio oddeutu 1500 o barthau gwarchod i fformat cyson a dibynadwy. Defnyddiwyd modelau mathemategol megis FLOWPATH a MODFLOW/MODPATH yn y mwyafrif o achosion lle bynnag y bo digon o ddata i ganiatáu datblygu model hydroddaearegol cysyniadol ar gyfer ardal. Mae'r Ganolfan yn cynghori ar

GROUNDWATER PROTECTION ZONES

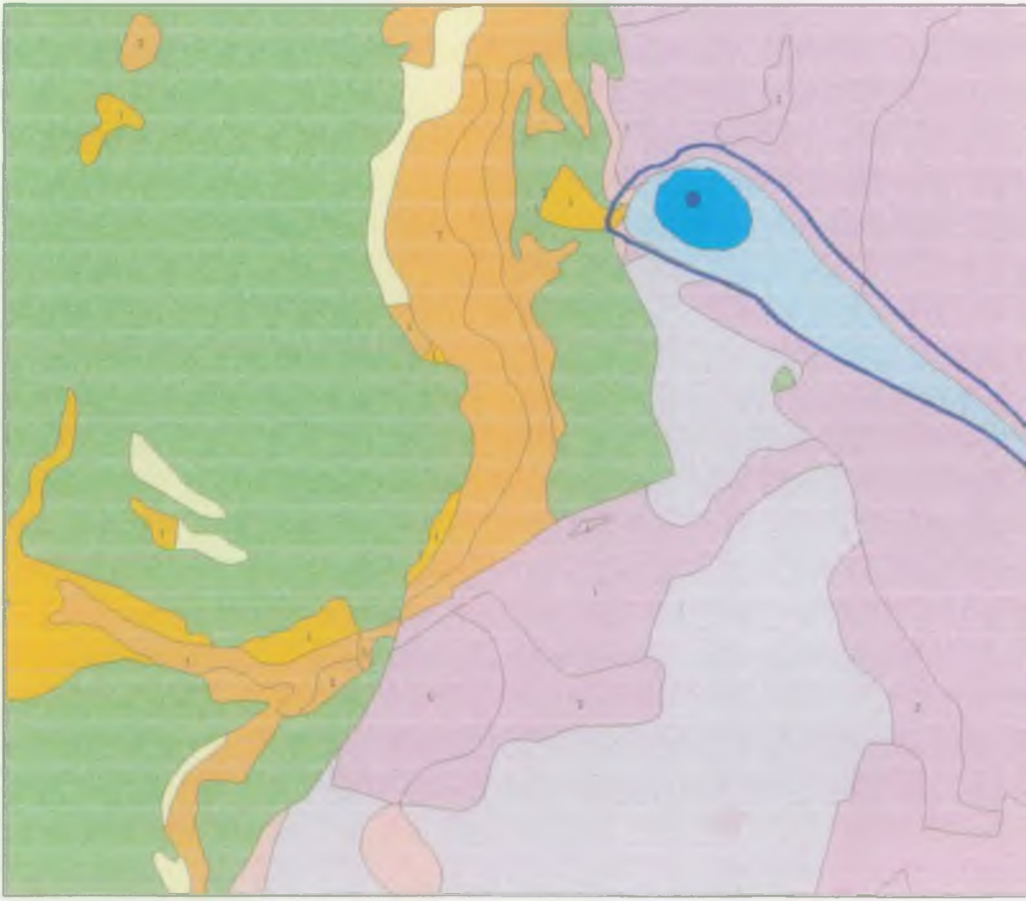
Methodology and definition of protection zones

The Environment Agency's Policy and Practice for the Protection of Groundwater provides a risk-based framework for evaluating proposals of land developments that may impact on the underlying groundwater. It is underpinned by a number of technical tools which allow more focussed assessment of the risks to groundwater. One of these tools is the designation of source protection zones around public supply abstractions and other sensitive targets.

The National Groundwater and Contaminated Land Centre has facilitated the definition of around 1500 protection zones to a reliable and consistent format. Mathematical models such as FLOWPATH and MODFLOW/MODPATH have been used in the majority of cases wherever there is sufficient data to allow a conceptual hydrogeological model to be developed for an area. The Centre advises on model applicability and co-ordinates activity in this area. In each case, three zones are defined around a particular site based on travel times of the groundwater (Zone I = 50

ba fodelau sy'n gymwys ac yn cyd-drefnu gweithgarwch yn y maes hwn. Ym mhob achos, diffinnir tri pharth o gwmpas safle arbennig ar sail amseroedd teithio'r dŵr daear (Parth I = 50 diwrnod, Parth II - 400 diwrnod) a chyfanswm arwynebedd y dalgylch y tynnir dŵr ohono (Parth III). Mae'r rhain yn cael eu storio ar ffurf ddigidol a gellir eu harddangos hefyd ar fapiau papur trwy ddefnyddio systemau gwybodaeth daearyddol (GIS)

Mae'r parthau gwarchod dŵr daear dynodedig yn arwydd bod bygythiadau



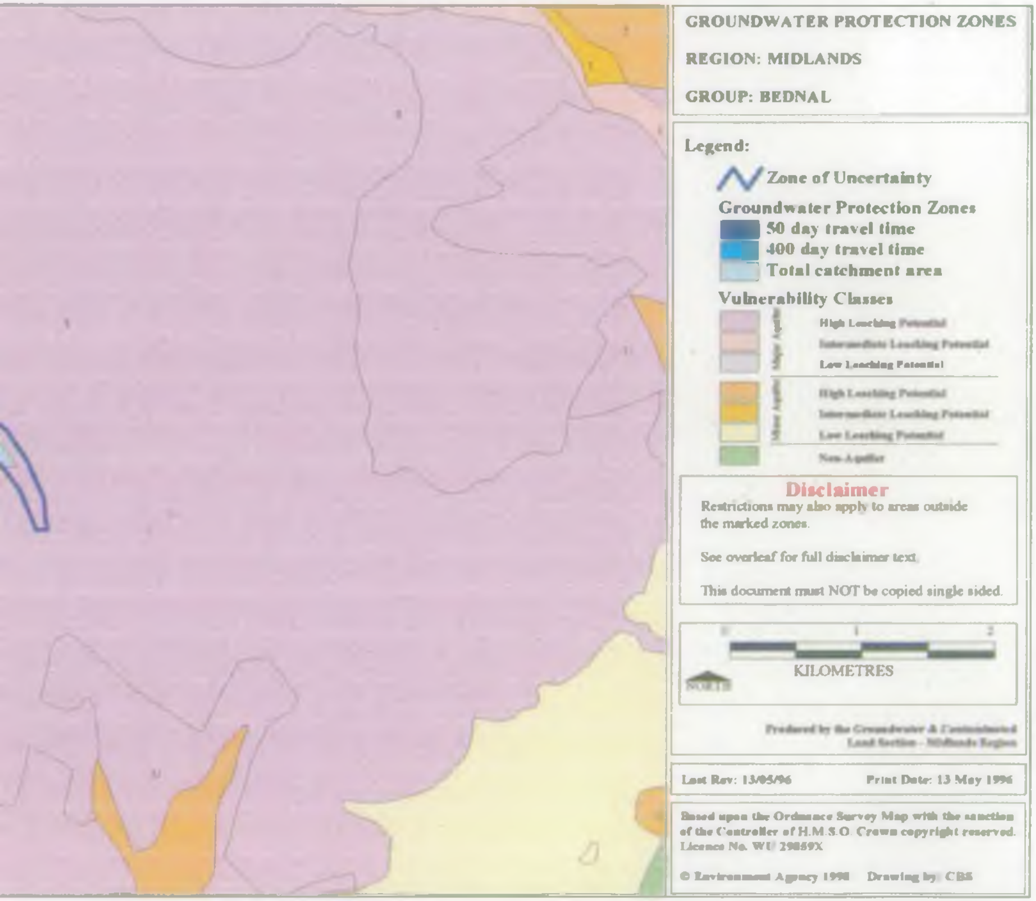
days; Zone II = 400 days) and the total catchment area of the abstraction (Zone III). These are stored in digitised format and can also be displayed on paper maps using geographical information systems (GIS).

The designated groundwater protection zones are a signal that,

penodol i ddŵr daear, o fewn ardaloedd dynodedig. Mae'r parthau eu hunain yn cael eu monitro er mwyn sicrhau eu bod yn cael eu cadw'n gyfredol wrth i amodau newid neu wrth i fwy o wybodaeth fod ar gael. Bydd y model presennol yn cael ei fireinio a'r parth yn cael ei ail-lunio lle bo'r angen.

Ymysg y materion a allai ysgogi ailwerthusiad o unrhyw un o'r parthau y mae'r canlynol:

- Newidiadau mewn patrymau tynnu dŵr (e.e. gan Gwmnïau Dŵr),



within specified areas, there are particular threats to groundwater. The zones themselves are monitored to ensure that they are kept up to date as conditions change or more information becomes available, where necessary the existing model will be refined and the zone redrawn.

- Cyhoeddi data newydd am ardal,
- Cynlluniau ar y cyd rhwng yr Asiantaeth a thirfeddianwyr neu ddatblygwyr.

Mae mwy o wybodaeth ar gael mewn nifer o lawlyfrau arweiniol:

"Guide to Groundwater Protection Zones in England and Wales", ISBN 0 11 310104

(ar gael gan The Stationery Office)

"Groundwater Protection for Small Sources"

Cyfrol 1 Review of available methodologies and existing practice

Cyfrol 2 Worked examples

Cyfrol 3 Compendium of Predefined Capture Zone Approximations Using WHPA-MWCAP

"Manual of Standard Zone Delineation Methodologies"

Issues which may trigger re-appraisal of a zone include:

- Changes in abstraction patterns (e.g. by Water Companies),
- Publication of new data about an area,
- Joint initiatives between the Agency and land-owners or developers.

Further information is available in a number of guidance manuals:

"Guide to groundwater protection zones in England and Wales"
ISBN 0 11 310104 (available from The Stationery Office)

"Groundwater protection for small sources"

Vol 1, Review of available methodologies and existing practice

Vol 2, Worked examples

Vol 3, Compendium of predefined capture zone approximations using WHPA-MWCAP.

"Manual of standard zone delineation methodologies".

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RHEOLAETH A CHYSYLLTIADAU:

Bydd Asiantaeth yr Amgylchedd yn darparu'i gwasanaeth i'w chwsmeriaid ar y lefel fwyaf lleol bosibl, gan roi pwyslais ar awdurdod ac atebolrwydd. Bydd yn ceisio bod yn gosteffeithiol ac yn effeithlon a rhoi'r gwasanaeth a'r gwerth gorau am arian.

Y Brif Swyddfa fydd yn gyfrifol am bolisi a chysylltiadau â chyrff cenedlaethol gan gynnwys y Llywodraeth.

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The Environment Agency delivers a service to its customers, with the emphasis on authority and accountability at the most local level possible. It aims to be cost-effective and efficient and to offer the best service and value for money.

Head Office is responsible for overall policy and relationships with national bodies including Government.

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Ar gyfer ymholiadau cyffredinol cysylltwch â swyddfa leol Asiantaeth yr Amgylchedd. Os nad ydych yn siwr â phwy i gysylltu neu pa un yw'ch swyddfa leol, galwch ein llinell ymholiadau cyffredinol.

For general enquiries please call your local Environment Agency office. If you are unsure who to contact, or which is your local office, please call our general enquiry line.

YMHOLIADAU CYFFREDINOL ASIANTAETH YR AMGYLCHEDD
ENVIRONMENT AGENCY GENERAL ENQUIRY LINE

0645 333 111

Ffoniwch y rhif argyfwng 24 awr i ddweud wrthym am ddigwyddiadau amgylcheddol sy'n ymwneud ag aer, tir a dwr.

The 24-hour emergency hotline number for reporting all environmental incidents relating to air, land and water.

LLINELL ARGYFWNG ASIANTAETH YR AMGYLCHEDD
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